Section 10.0

Development Planning

DOUBLE EAGLE II AIRPORT
MASTER PLAN STUDY

10.1 INTRODUCTION

This section presents the physical 20-year Master Plan for Double Eagle II Airport. The plan is described in a series of development topics for clarity and understanding. Emphasis is placed on capital improvements through the year 2022 in keeping with the Federal Aviation Administration's (FAA) definition of a 20-year Master Plan. However, provisions are made for expanding the airport beyond 20 years, to its ultimate capacity and configuration.

It is implicit in the planning for Double Eagle II Airport that the existing site be developed to its full potential to serve all segments of general aviation (GA) in accordance with the recommendations contained in Sections 6.0 and 7.0, Airside Facility Requirements and Landside Facility Requirements, respectively. A staging program of improvements has been planned which will ensure an adequate balance between aviation needs, community goals, funding, and financial feasibility. Detailed staging and cost estimates are described in Section 11.0, Implementation Program.

This section describes the basic planning elements of the recommended overall 20-year development program of the airport through the year 2022. The following eight major subjects are discussed in this section:

1) The Preferred Long-Range Plan,
2) Ultimate Land Requirements,
3) Ultimate Airport Land Use Plan,
4) Surrounding Land Use,
5) Surface Transportation,
6) Conceptual Building Area Planning,
7) Eclipse Site Planning, and
8) Airport Security.

Planning is an interactive process and this process examined the eight areas enumerated above. However, for ease in explanation, each subject is discussed individually in the following analysis.

10.2 PREFERRED LONG-RANGE PLAN

The recommended Long-Range Plan, shown on Figure 10.1, depicts the airport as it might look toward the end of the forecast period. The airport has been expanded to include the necessary elements as set forth in the facilities requirement program. This layout is not intended as a finite plan, but demonstrates the areas as they might appear toward the end of the forecast period. The principal features of the plan are as follows:

- EA/EIS Runway 4 Extension Project/5-Year Program;
- Runway 4 Extension Program (Runway Extension, Taxiway Extension, NAVAID Relocations, etc.);
- Rehabilitate Runway 17/35, Taxiway "B," Runway 17/35 MIRL, and Taxiway "B" MITL;
- Rehabilitate Runway 4/22, Taxiway "A," Runway 4/22 MIRL, and Taxiway "A" MITL;
- Install New Airport Rotating Beacon;
- Expanded Electrical Vault;
- Install Emergency Power Equipment;
- Rehabilitate Existing Transient Apron;
- Construct Additional Aircraft Parking Apron;
- Install Chainlink Perimeter Fence;
- Expanded Maintenance Shop;
- Construct Aircraft Wash Rack;
- Paseo del Volcan Road Improvements;
- Fixed Base Operator (FBO) Expansions (Existing FBOs);
- Construct Additional Public Auto Parking;
- Infrastructure/Spine Road Extension (Southwest of Existing Road);
- Site Preparation for Future Corporate Hangar Complex;
- Site Preparation for Future T-Hangar Complex;
- Site Preparation for Future FBO Hangar Complex;
- Crossfield Parallel Taxiways between Runways 4/22 and 17/35;
- Runway 4/22 Outer Parallel Taxiway (Phase I)
- Crossfield Runway Program (EIS and Development Items);
- Parallel 4L/22R Runway/Taxiway Program;
- Crossfield Taxiway System (Midfield); and
- Construction of Airport Internal Loop Road.

Double Eagle II Airport Master Plan

URS

PREFERRED LONG RANGE PLAN (GEOMETRIC/NAVAID LAYOUT)

QUAIL RANCH

NORTH MESA

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

CITY OF ALBUQUERQUE OPEN SPACE

PASEO DEL VOLCAN EXPRESSWAY CORRIDOR STUDY (ALIGNMENT A-1)

PREC. RPZ / NON-PREC. RPZ

3,000' X 100' LANDING STRIP

FUTURE 1,500' X 100' RUNWAY

GLIDE SLOPE ANTENNA

PREC. RPZ

MALSR

FUTURE PARALLEL RUNWAY

WIND CONE

FUTURE 9,000' X 100' PARALLEL RUNWAY

FUTURE PARALLEL CROSSFIELD TAXIWAY SYSTEM

FUTURE ROAD

4,300'

AWOS

REIL

PAPI

VIS. RPZ

17

35

GLIDE SLOPE ANTENNA

WIND CONE SEGMENTED CIRCLE

EXISTING 6,000' X 100' RUNWAY

FUTURE 8,000' X 100' RUNWAY

PETROGLYPH NATIONAL MONUMENT

NON-PREC. RPZ

LOCALIZER

4L

FUTURE PARALLEL CROSSFIELD TAXIWAY SYSTEM

EXISTING 7,400' X 100' RUNWAY

FUTURE 11,000' X 100' RUNWAY

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

STATE OF NEW MEXICO

2,000' RUNWAY EXTENSION

CITY OF ALBUQUERQUE OPEN SPACE

3,600' RUNWAY EXTENSION

PASEO DEL VOLCAN

4R

01

STATE OF NEW MEXICO LAND OFFICE

CITY OF ALBUQUERQUE AVIATION

ACCESS ROAD

CITY OF ALBUQUERQUE OPEN SPACE

FAR WEST MESA

WESTLAND NORTH

N

1000 0 1000 2000

GRAPHIC SCALE IN FEET
SCALE: 1" = 2,000'

LEGEND

- DOUBLE EAGLE II AIRFIELD AREA
- DOUBLE EAGLE II DEVELOPMENT (EXISTING/PROPOSED)
- DOUBLE EAGLE II DEVELOPMENT (FUTURE)
- EXISTING AIRFIELD PAVEMENT
- FUTURE AIRFIELD PAVEMENT
- FUTURE CROSSWIND RUNWAY CORRIDOR
- CORRIDOR LOCATION STUDY (PASEO DEL VOLCAN EIS, MARCH 2000)
- EXISTING/FUTURE INTERNAL ROADWAY CORRIDOR RESERVED

FIGURE: 10.1

J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.1.DWG 06/17/02 16:34

10.3 AIRSIDE IMPROVEMENTS

As shown on Figure 10.1, the ultimate airfield geometry at Double Eagle II Airport includes extensions to the existing runways, construction of a new parallel capacity runway, and the construction of a crosswind runway. Each runway system is described in the following paragraphs. Runway 4/22 (future 4R/22L) will be extended 3,600 feet for a total length of 11,000 feet and Runway 17/35 will be extended 2,000 feet for a total length of 8,000 feet.

10.3.1 Runway 4R/22L System

Runway 4R/22L will remain the primary runway, with a non-precision approach to Runway 4R and a precision approach to Runway 22L. The airport reference code (ARC) for Runway 4R/22L is and will remain ARC D-II. The pavement strength of Runway 4R/22L has been calculated as follows:

Landing Gear Configuration	Existing Strength*	Ultimate Strength*
S: Single Wheel	30,000	45,000
D: Dual Wheel	45,000	74,000
DT: Dual Tandem Wheel	n/a	140,000
DDT: Double Dual Tandem Wheel	n/a	n/a

*Aircraft weight in pounds.

10.3.1.1 Runway 4R/22L Pavement and Safety Area

The preferred physical plan, as illustrated on Figure 10.1, shows the capacity of an ultimate Runway 4R/22L length of 11,000 feet. This would require constructing approximately 3,600 feet of new pavement to the southwest. An area 500 feet wide that extends 1,000 feet beyond both runway ends would be reserved for a graded runway safety area (RSA). This runway configuration will provide 11,000 feet of full strength pavement, with the entire length available in both directions for all aircraft operations.

Under this proposal, no modification of design standards is required for Runway 4R/22L. There would be no change in the location of the runway threshold at the approach end of Runway 22L, and the runway declared distances would not change as a result of any actions at the southwest end of the runway. The declared distances for the overall runway will change, however, due to the runway and RSA extension at the southwest end of the runway. The declared distances for the existing and ultimate runway configuration are presented in Table 10.1.

TABLE 10.1

DECLARED DISTANCES
Double Eagle II Airport
Master Plan Study

Declared Distances*	4R/22L		4L/22R		17/35		10/28	
	Existing	Ultimate	Existing	Ultimate	Existing	Ultimate	Existing	Ultimate
Takeoff Run Available (TORA)[1]	7,400/ 7,400	11,000/ 11,000	-	9,000/ 9,000	6,000/ 6,000	8,000/ 8,000	-	7,500/ 7,500
Takeoff Distance Available (TODA)[2]	7,400/ 7,400	11,000/ 11,000	-	9,000/ 9,000	6,000/ 6,000	8,000/ 8,000	-	7,500/ 7,500
Accelerates-Stop Distance Available (ASDA)[3]	7,400/ 7,400	11,000/ 11,000	-	9,000/ 9,000	6,000/ 6,000	8,000/ 8,000	-	7,500/ 7,500
Landing Distance Available (LDA)[4]	7,400/ 7,400	11,000/ 11,000	-	9,000/ 9,000	6,000/ 6,000	8,000/ 8,000	-	7,500/ 7,500

*Distances shown in feet.

Notes:
[1] The length of runway declared available and suitable for satisfying takeoff run requirements.
[2] The TORA plus the length of any remaining runway or clearway beyond the far end of the TORA available for satisfying takeoff distance requirements. The usable TODA length is controlled by obstacles present in the departure area vis-à-vis aircraft performance. As such, the usable TODA length is determined by the aircraft operator before each takeoff and requires knowledge of the location of each controlling obstacle in the departure area. Extending the usable TODA lengths requires removal of existing objects limiting the usable TODA lengths.
[3] The length of runway plus stopway declared available and suitable for satisfying accelerate-stop distance requirements.
[4] The length of runway declared available and suitable for satisfying landing distance requirements.

Source: FAA AC 150/5300-13, Airport Design.
URS Corporation, 2002.

10.3.1.2 Runway 4R/22L NAVAIDS

Navigational/electronic and visual equipment associated with Runway 4R/22L will ultimately include the following:

- Category I instrument landing system and MALSR for an approach to Runway 22L,
- PAPI's for Runway 4R,
- HIRL's on Runway 4R and Runway 22L,
- REIL's on Runway 4R and Runway 22L,
- Segmented circle collocated with the windcone near the glide slope southwest of Runway 22L threshold,
- Lighted windcone located in segmented circle, and
- Lighted windcone located near Runway 4R end.

10.3.2 Runway 4L/22R System (Future)

Future Runway 4L/22R will be a 9,000-foot secondary parallel runway, with a non-precision approach to Runway 4L and a precision approach to Runway 22R. The ARC for Runway 4/22 will be ARC D-II.

The proposed pavement strength of Runway 4L/22R has been calculated for the Master Plan as follows:

Landing Gear Configuration	Existing Strength*	Ultimate Strength*
S: Single Wheel	n/a	45,000
D: Dual Wheel	n/a	74,000
DT: Dual Tandem Wheel	n/a	140,000
DDT: Double Dual Tandem Wheel	n/a	n/a

*Aircraft weight in pounds.

10.3.2.1 Runway 4L/22R Pavement and Safety Area

The preferred Physical Plan, as illustrated on Figure 10.1, shows the capability of an ultimate Runway 4L/22R length of 9,000 feet. This would require constructing approximately 9,000 feet of new pavement, with an additional 500-foot-wide graded RSA that surrounds the runway and extends 1,000 feet beyond both runway ends.

This runway configuration will provide 9,000 feet of full strength pavement, with the entire length available in both directions for aircraft operations. With no displaced thresholds at either end of the runway, the declared distances for the existing and ultimate runway configuration for aircraft operations in each direction are presented in Table 10.1.

10.3.2.2 Runway 4L/22R NAVAIDS

Navigational/electronic and visual equipment associated with Runway 4L/22R will ultimately include the following:

- Category I instrument landing system and MALSR for an approach to Runway 22R,
- PAPI's for Runway 4L,
- MIRL's on Runway 4L/22R, and
- Lighted windcone located at both ends of Runway 4L/22R.

10.3.3 Runway 17/35 System

Existing Runway 17/35 will remain the secondary runway and would serve aircraft up to and including ARC D-II. This group of aircraft is capable of operating from the existing 6,000-foot runway, up to the following maximum gross takeoff weights (limited by pavement strength):

Landing Gear Configuration	Existing Strength*	Ultimate Strength*
S: Single Wheel	30,000	45,000
D: Dual Wheel	45,000	74,000
DT: Dual Tandem Wheel	n/a	140,000
DDT: Double Dual Tandem Wheel	n/a	n/a

*Aircraft weight in pounds.

10.3.3.1 Runway 17/35 Pavement and Safety Area

The preferred Physical Plan, as illustrated on Figure 10.1, shows the capability of an ultimate Runway 17/35 length of 8,000 feet. This would require constructing approximately 2,000 feet of new pavement to the south. An additional area would be reserved to accommodate the 500-foot-wide graded RSA that extends 1,000 feet south of the extended runway end. The existing RSA at the approach end of Runway 17 is 500 feet wide and extends 1,000 feet beyond the runway end. This runway configuration will provide 8,000 feet of full strength pavement, with the entire length available for aircraft operations in either direction.

Under this proposal, no modification of design standards is required for Runway 17/35. There would be no change in the location of the runway threshold at the approach end of Runway 17, and the runway declared distances would not change as a result of any actions at the south end of the runway. The declared distances for the overall runway will change, however, due to the runway and RSA extension at the south end of the runway. The declared distances for the existing and ultimate runway configuration are presented in Table 10.1.

10.3.3.2 Runway 17/35 NAVAIDS

Navigational/electronic and visual equipment associated with Runway 4L/22R will ultimately include the following:

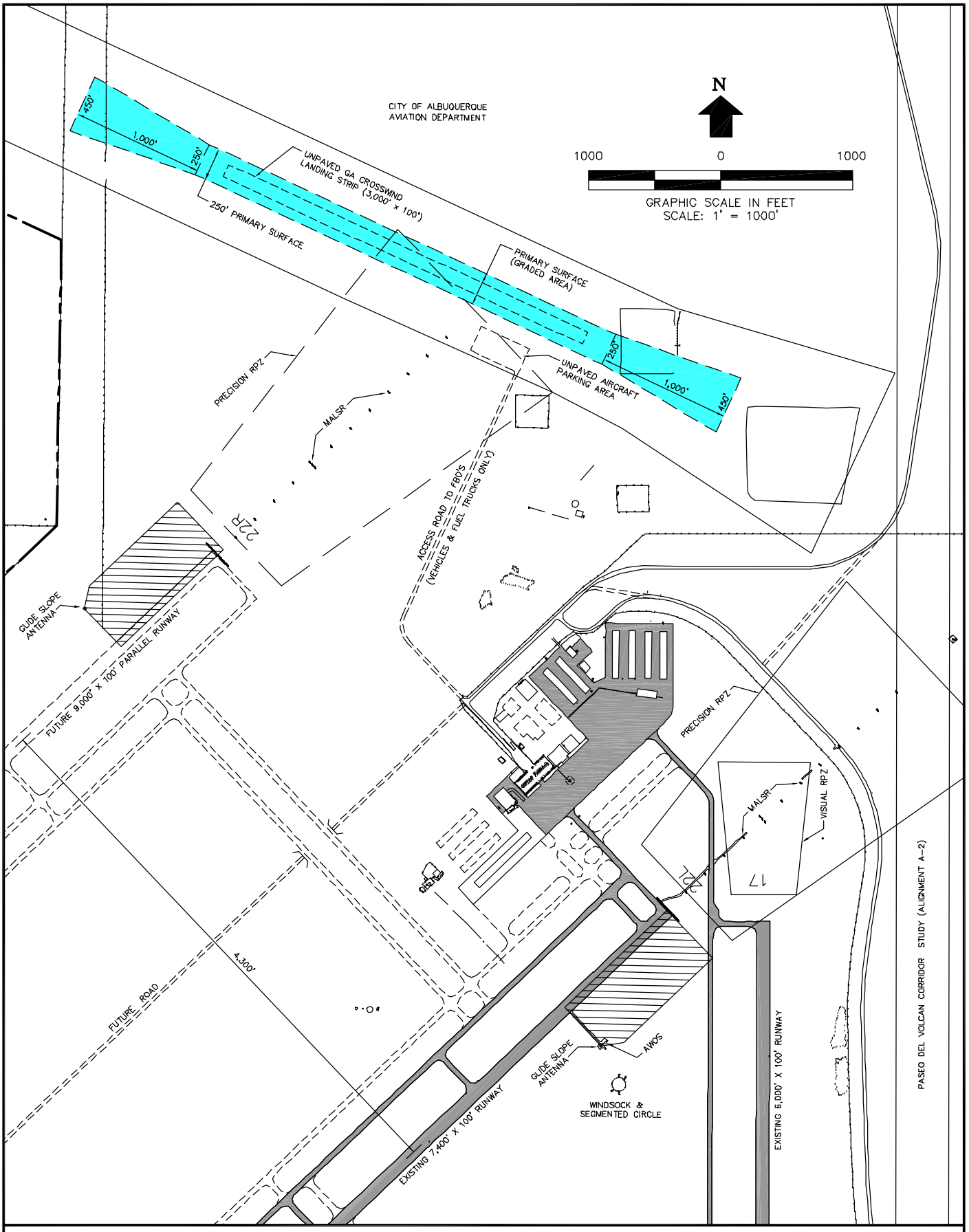
- REILs on Runways 17 and 35,
- PAPIs for Runway 17 and 35,
- MIRLs on Runways 17 and 35, and
- Windcone on Runway 35 end.

10.3.4 Crosswind Runway 10/28 System (Future)

As shown on Figure 10.2, a future 3,000-foot crosswind runway is presented in a 10/28 orientation. The crosswind runway will initially be unpaved, which will allow for greater flexibility should the orientation require a shift in direction. This orientation is recommended to provide additional wind coverage for January through June when the wind coverage of the runways falls below the FAA recommended 95 percent. This would also require acquisition of 252.8 acres of land on the northwest from the City of Albuquerque Open Space Division. The runway would initially have an ARC of A-I with an ultimate ARC of D-II. The initial and ultimate strengths of Runway 10/28 would be as follows:

Landing Gear Configuration	Initial Unpaved Strength*	Ultimate Paved Strength*
S: Single Wheel	3,500	45,000
D: Dual Wheel	n/a	74,000
DT: Dual Tandem Wheel	n/a	140,000
DDT: Double Dual Tandem Wheel	n/a	n/a

*Aircraft weight in pounds.



J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.2.DWG 06/17/02 16:39

Double Eagle II
Airport Master Plan

URS

INITIAL UNPAVED CROSSWIND RUNWAY LAYOUT

FIGURE:
10.2

10.3.4.1 Crosswind Runway 10/28 Pavement and Safety Area

The preferred Physical Plan, as illustrated on Figure 10.1, shows the capability of an ultimate crosswind Runway 10/28 length of 7,500 feet. The initial 3,000-foot segment of the crosswind runway, shown on Figure 10.2, would be unpaved. The graded RSA would initially be 120 feet wide and would extend 240 feet beyond the runway ends. Once the crosswind runway was extended to 7,500 feet and paved, the graded RSA would be 500 feet wide and would extend 1,000 feet beyond the runway ends.

With no displaced thresholds at either end of the runway, the declared distances in the initial 3,000-foot and ultimate 7,500-foot runway configuration for aircraft in each direction are presented in Table 10.1.

10.3.4.2 Crosswind Runway 10/28 NAVAIDS

The configuration of navigational/electronic and visual equipment located on-airport associated with Runway 10/28 will initially include a windcone and turf runway markings. Ultimately, Runway 10/28 will include a PAPI system and runway edge lighting.

10.3.5 Runway End Data

As part of this Master Plan Study and based on the preferred ultimate runway configuration, preliminary engineering efforts establish future runway end elevations and runway end coordinates. The future runway end data along with existing runway end information is shown in Table 10.2. This information will be used to establish ground and imaginary height elevations on the Federal Aviation Regulations (FAR) Part 77 airspace drawing.

TABLE 10.2

RUNWAY END DATA
Double Eagle II Airport
Master Plan Study

Runway	Runway End Elevation	Northing	Easting
4R Existing	5837.00	1,506,259.211	1,473,239.496
4R Future	5841.20	1,503,780.943	1,470,628.331
22L Existing	5810.10	1,511,351.611	1,478,604.975
17 Existing	5805.80	1,511,270.551	1,479,334.540
35 Existing	5798.90	1,505,273.656	1,479,308.334
35 Future	5796.07	1,503,273.675	1,479,299.594
4L Future	5870.00	1,507,904.910	1,468,727.149
22R Future	5825.00	1,514,100.582	1,475,255.063
10 Future	5854.00	1,518,712.135	1,471,500.744
28 Future	5811.00	1,515,690.414	1,477,980.844

URS Corporation, 2002.

10.3.6 Taxiway System

An essential element of any airport layout is an efficient aircraft ground circulation system, connecting the runways with the aviation facilities throughout the airport. To maximize the effectiveness and capacity of the runway system, parallel taxiways placed at exit and entry points along the runway have been proven most effective. The FAA, airport users groups, and the consultant have recommended this basic design, based on major taxiways located parallel to the runways, for Double Eagle II Airport.

Based upon the forgoing consideration for an overall concept for the taxiway system, the following requirements were identified for Double Eagle II Airport and are reflected on Figure 10.1. The following sequence does not necessarily reflect an order of priority or precedence:

- Extend Runway 4R parallel taxiway with runway extension project.
- Rehabilitate Taxiway "B" system, including connector Taxiways B1, B2, and B3.
- Rehabilitate Taxiway "A" system, including connector Taxiways A1 through A6.
- Construct crossfield parallel taxiways between Runway 4R/22L and Runway 17/35.
- Construct 4R-22R taxiway system.
- Construct crossfield taxiway system (midfield).

10.3.7 Airspace/Approach Zone Plan

In accordance with FAR Part 77 and FAA Advisory Circular (AC) 150/5300-13, Appendix 7, an airport airspace drawing was prepared for Double Eagle II Airport and shown as part of the ALP set. The purpose of this drawing is to identify how high objects can be on and in the vicinity of the airport without impacting the airfield use. In accordance with the airport development plan, ultimate precision instrument approach surfaces are shown on three runway ends (4L, 4R, and 10) and non-precision approaches are shown on three runway ends (22L, 22R, and 28). Visual approaches are shown on Runway 17 and Runway 35 ends.

10.3.7.1 Instrument Approaches

Planned and anticipated improvements to electronic navigational approach capabilities at Double Eagle II Airport would be established through the installation of non-precision instrument and precision instrument facilities. Runway 22 (Future Runway 22L) is currently served by a non-precision Global Positioning Satellite (GPS) approach procedure with straight-in cloud ceiling height minimums of 323 feet and horizontal visibility minimums of ½ mile. A precision instrument Category-I Instrument Landing System (ILS) approach procedure also currently serves the runway with straight-in cloud ceiling height minimums of 200 feet and horizontal visibility minimums of ½ mile.

Future improvements to electronic instrument approach capabilities serving other runways would include:

- Precision instrument Category-I approach procedures having straight-in cloud ceiling height minimums of 200 feet and horizontal visibility minimums of ½ mile to serve future Runway 22R and Runway 10.
- Non-precision instrument approach procedures having straight-in cloud ceiling height minimums similar to those serving Runway 22 (323 feet) or higher and horizontal visibility minimums ranging from ½ to 1 mile to serve Runway 4 (Future Runway 4R) and future Runways 4L and 28.

Electronic navigational facilities that would offer future precision-instrument capabilities may utilize existing or emerging navigational technologies such as the current ILS or emerging technologies such as Local Area Augmentation System (LAAS) and Wide Area Augmentation System (WAAS), respectively. The LAAS/WAAS technologies are promised to offer both horizontal and vertical guidance capabilities similar to those traditionally offered by the ILS.

10.4 LAND REQUIREMENTS

10.4.1 Land Exchange Program

The City of Albuquerque Administration, Aviation Department, Open Space Division, and the State Land Office and the Quail Ranch developers are involved in a complex land exchange that will accomplish the following goals.

The Open Space Division would like to acquire additional buffer area along the west boundary of the Petroglyph National Monument to protect this resource; the Aviation Department does not intend to develop east of the existing access road and is willing to make this exchange to benefit the monument; the Aviation Department would also like to acquire more property on the west side of the airport to accommodate future development away from the monument.

The City of Albuquerque would like to acquire the 200-acre parcel on the west side of Runway 17/35 from the State Land Office to meet their obligation to provide a 150-acre site to Eclipse Aviation, a new aircraft manufacturing company that has located in Albuquerque; Eclipse Aviation is a major factor in economic development in the area.

The Quail Ranch developers are willing to make the exchange and donate a portion of their property to aid the city and the state in the successful development of Eclipse Aviation; the Quail Ranch developers also recognize the need and potential for development of non-aviation related support facilities for Eclipse Aviation near their work site to promote further economic development in the area.

Proposed land ownership, separated into current and ultimate exchanges, is listed in Table 10.3. Depictions of these exchanges are shown on Figures 10.3 and 10.4.

TABLE 10.3

LAND EXCHANGE PROGRAM
Double Eagle II Airport
Master Plan Study

Current Owners			
Tract	**Owner**	**Acreage**	**Acreage Summary**
B	OS	251	
D	SLO	200	
E	SLO	51	
C	SLO	178	
J	SLO	161	Open Space (OS) 74
I	COA-AV	200	State Land Office (SLO) 641
H	COA-AV	51	Aviation Dept. (COA-AV) 582
L	COA-AV	218	Private (PVT) 200
M	OS	120	**Total 2,147**
K	OS	353	
F	SLO	52	
N	PVT	200	
G	COA-AV	193	

Ultimate Exchange			
Tract Current Owner	**Owner After Exchange**	**Acreage**	**Acreage Summary**
B-SLO	SLO	251	
D-OS	OS	200	
E-OS	OS	51	
C-COA-AV	COA-AV	178	
J-COA-AV	COA-AV	161	Open Space (OS) 74
I-OS	OS	200	State Land Office (SLO) 641
H-COA-AV	COA-AV	51	Aviation Dept. (COA-AV) 582
L-SLO	SLO	218	Private (PVT) 200
M-COA-AV	COA-AV	120	**Total 2,147**
K-OS	OS	353	
F-SLO	SLO	52	
N-PVT	PVT	200	
G-COA-AV	COA-AV	193	

Source: City of Albuquerque Aviation Department, 2002.

Existing Land Ownership (Figure 10.3):

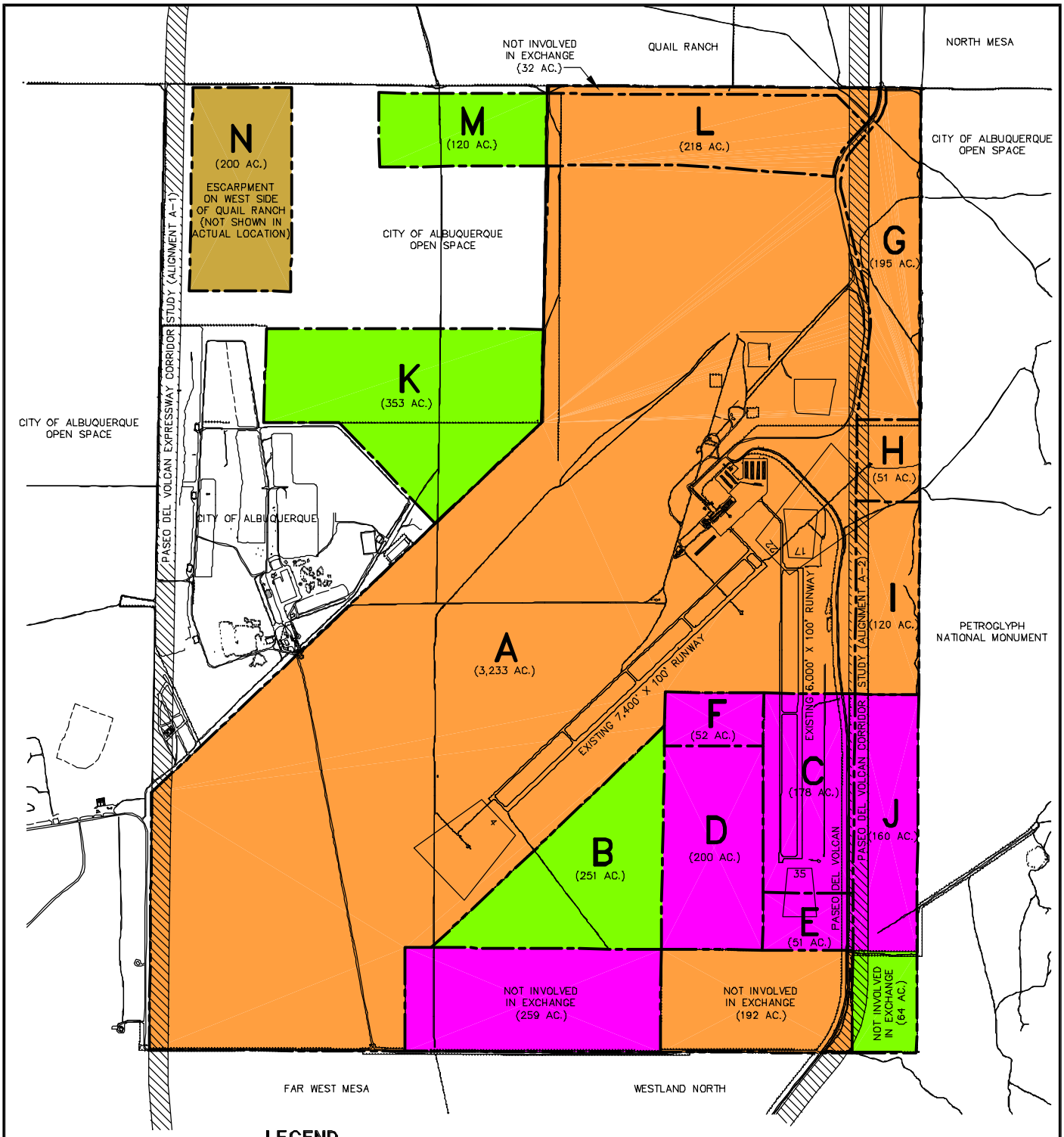
1) Tracts B, M, and K currently belong to the City of Albuquerque Open Space Division;

2) Tracts D, E, C, J, and F currently belong to the State Land Office, the City of Albuquerque Aviation Department has an easement for Tract C;

3) Tract N, 9 (not shown on Figure 10.1) currently belongs to a private developer;

4) Tracts I, H, L, and G belong to the Aviation Department; and

5) Current acreage ownership is as follows: Open Space Division– 724, State Land Office – 641, Aviation Department – 582, and private developer – 200.



LEGEND

- CITY OF ALBUQUERQUE AVIATION DEPARTMENT
- PROPERTY OWNERSHIP BY OTHERS
- CITY OF ALBUQUERQUE AVIATION DEPARTMENT
- CITY OF ALBUQUERQUE OPEN SPACE
- STATE OF NEW MEXICO LAND OFFICE
- PRIVATE
- LOCATION STUDY CORRIDOR (PASEO DEL VOLCAN EIS, MARCH 2000)
- B — TRACT

NOTE: OWNERSHIP/MANAGEMENT GROUPS AS OF MARCH, 2001.

N

3000 0 3000

GRAPHIC SCALE IN FEET
SCALE: 1" = 3000'

J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.3.DWG 06/17/02 16:43

Double Eagle II Airport Master Plan

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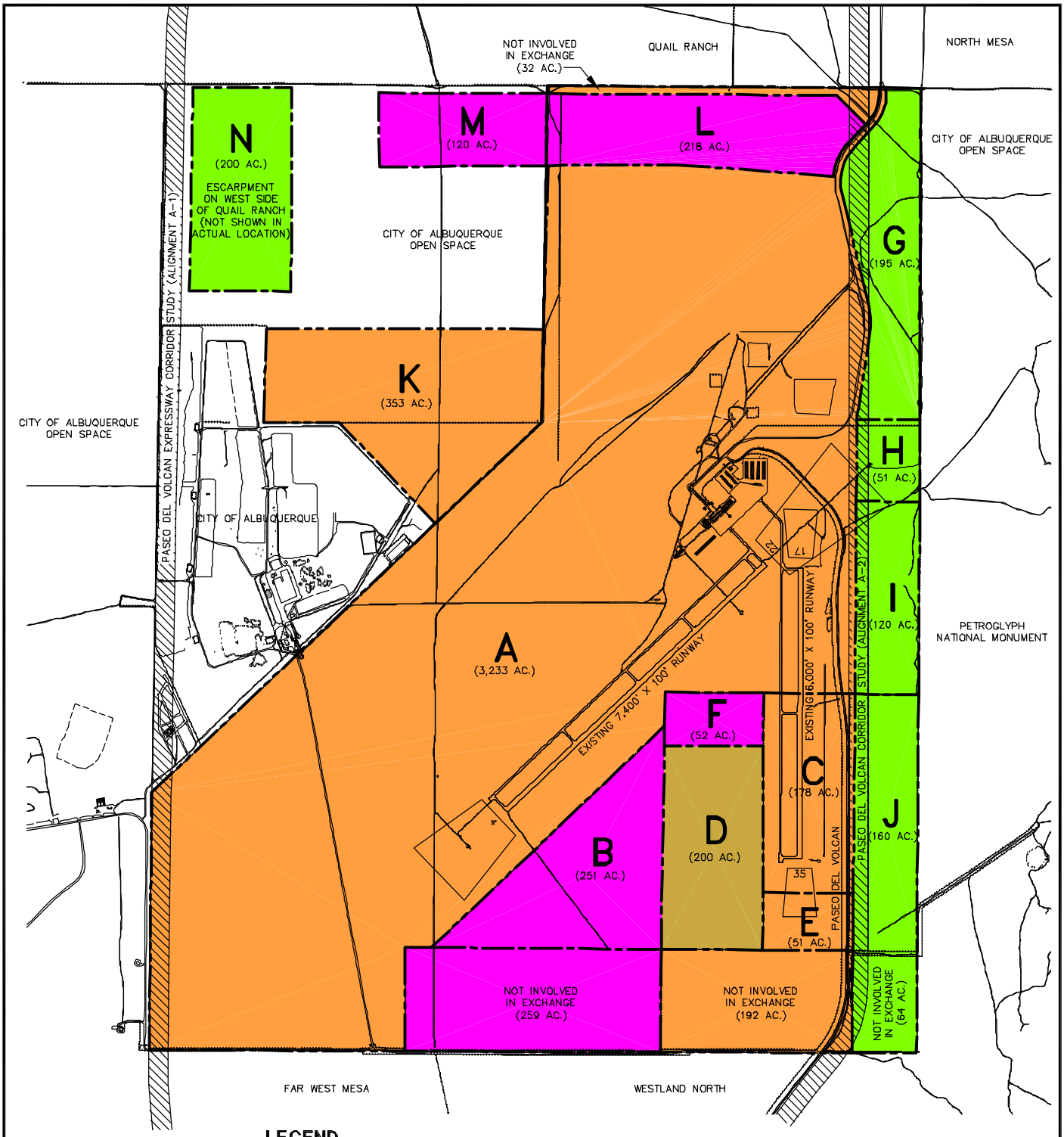
EXISTING AIRPORT PROPERTY BY OWNERSHIP/MANAGEMENT GROUPS

FIGURE: 10.3



LEGEND

- CITY OF ALBUQUERQUE AVIATION DEPARTMENT
- PROPERTY OWNERSHIP BY OTHERS
- CITY OF ALBUQUERQUE AVIATION DEPARTMENT
- CITY OF ALBUQUERQUE OPEN SPACE
- STATE OF NEW MEXICO LAND OFFICE
- PRIVATE
- LOCATION STUDY CORRIDOR (PASEO DEL VOLCAN EIS, MARCH 2000)
- B — TRACT

NOTE: OWNERSHIP/MANAGEMENT GROUPS AS OF MARCH, 2001.

N

3000 0 3000

GRAPHIC SCALE IN FEET
SCALE: 1" = 3000'

Double Eagle II Airport Master Plan

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ULTIMATE LAND OWNERSHIP

FIGURE: 10.4

J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.4.DWG 06/17/02 08:33

Ultimate Land Ownership (Figure 10.4):

1) Tracts J, I, H, N, and G belong to the Open Space Division;

2) Tracts B, I, M, and F belong to the State Land Office;

3) Tract D belongs to a private developer;

4) Tracts E, C, and K belong to the Aviation Department; and

5) Final acreage ownership is as follows: Open Space Division – 724, State Land Office – 641, Aviation Department – 582, and private developer – 200.

Acreages shown are subject to a plus or minus 2 percent margin or error until surveys are complete.

10.4.2 Ultimate Land Requirements

In addition to the land exchange outlined above, an additional 252.8 acres will need to be exchanged/acquired by the City of Albuquerque's Aviation Department to accommodate the ultimate buildout of the crosswind runways. As depicted on Figure 10.5, the City of Albuquerque's Open Space Division currently owns this area.

10.5 ULTIMATE LAND USE PLAN

An essential ingredient to the efficient operation of an airport is the organization of the various functions that occur on the airport into manageable units. These units should be organized in such a manner as to provide equal status to like uses, while at the same time separating units to allow for expansion as the airport continues to develop.

Figure 10.6 illustrates the ultimate on-airport land use plan developed for Double Eagle II Airport. All airport property is shown belonging to a land use category. This plan provides adequate acreage for each of the land uses set forth in the facility requirements program. In addition, it complements the existing and future public access, takes into account the location of existing facilities to remain, recognizes environmental characteristics of undeveloped acreage, and reflects decisions made by the Aviation Department staff during the course of the study.

In this plan, associated functions occur adjacent to one another and, particularly in the GA area, sufficient acreage for expansion throughout the 20-year forecast period is available.

Double Eagle II Airport Master Plan

URS

ULTIMATE LAND REQUIREMENT PLAN

QUAIL RANCH

NORTH MESA

STATE OF NEW MEXICO LAND OFFICE

STATE OF NEW MEXICO LAND OFFICE

CITY OF ALBUQUERQUE OPEN SPACE

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

FUTURE 7,500' X 100' RUNWAY

CITY OF ALBUQUERQUE OPEN SPACE

PASEO DEL VOLCAN EXPRESSWAY CORRIDOR STUDY (ALIGNMENT A-1)

CITY OF ALBUQUERQUE OPEN SPACE

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

CITY OF ALBUQUERQUE PUBLIC SERVICES

CITY OF ALBUQUERQUE OPEN SPACE

RPZ

PREC. RPZ

VIS. RPZ

17

35

FUTURE 9,000' X 100' RUNWAY

FUTURE AVIATION DEVELOPMENT

EXISTING 7,400' X 100' RUNWAY

FUTURE 11,000' X 100' RUNWAY

EXISTING 6,000' X 100' RUNWAY

FUTURE 8,000' X 100' RUNWAY

PETROGLYPH NATIONAL MONUMENT

STATE OF NEW MEXICO LAND OFFICE

ECLIPSE DEVELOPMENT

PASEO DEL VOLCAN

CITY OF ALBUQUERQUE OPEN SPACE

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

STATE OF NEW MEXICO LAND OFFICE

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

CITY OF ALBUQUERQUE OPEN SPACE

FAR WEST MESA

WESTLAND NORTH

LEGEND

- EXISTING COA AVIATION DEPARTMENT PROPERTY
- EXISTING COA OPEN SPACE
- EXISTING COA PUBLIC SERVICES
- EXISTING NEW MEXICO STATE LAND OFFICE
- LAND TO BE ACQUIRED OR EXCHANGED
- PRIVATE OWNERSHIP

N

2000 0 2000

GRAPHIC SCALE IN FEET
SCALE: 1" = 2,000'

FIGURE: 10.5

J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.5.DWG 06/17/02 11:28

QUAIL RANCH

NORTH MESA

STATE OF NEW MEXICO LAND OFFICE

STATE OF NEW MEXICO LAND OFFICE

CITY OF ALBUQUERQUE OPEN SPACE

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

FUTURE 7,600' X 100' RUNWAY

CITY OF ALBUQUERQUE OPEN SPACE

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

CITY OF ALBUQUERQUE OPEN SPACE

PASEO DEL VOLCAN EXPRESSWAY CORRIDOR STUDY (ALIGNMENT A-1)

CITY OF ALBUQUERQUE

ZOR

CITY OF ALBUQUERQUE OPEN SPACE

PREC. RPZ

VIS. RPZ

17

35

FUTURE 9,000' X 100' RUNWAY

EXISTING 7,400' X 100' RUNWAY

FUTURE 11,000' X 100' RUNWAY

EXISTING 6,000' X 100' RUNWAY

PETROGLYPH NATIONAL MONUMENT

4L

STATE OF NEW MEXICO LAND OFFICE

ECLIPSE DEVELOPMENT

PASEO DEL VOLCAN

CITY OF ALBUQUERQUE OPEN SPACE

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

STATE OF NEW MEXICO LAND OFFICE

45

STATE OF NEW MEXICO LAND OFFICE

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

35

VIS. RPZ

CITY OF ALBUQUERQUE OPEN SPACE

FAR WEST MESA

WESTLAND NORTH

LEGEND

- AIRFIELD AREA
- GENERAL AVIATION FACILITIES
- INDUSTRIAL AVIATION
- AIRPORT OPERATIONS
- UNDEVELOPED AREA
- RESERVED FOR FUTURE AVIATION DEVELOPMENT
- LOCATION STUDY CORRIDOR (PASEO DEL VOLCAN EIS, MARCH 2000)
- ROADS

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2000 0 2000

GRAPHIC SCALE IN FEET
SCALE: 1" = 2,000'

J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.6.DWG 06/17/02 11:29

Double Eagle II Airport Master Plan

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ULTIMATE ON-AIRPORT LAND USE PLAN

FIGURE: 10.6

10.5.1 On-Airport Land Use Classifications

Categories of on-airport land use for regulatory purposes are set forth as follows:

- Airside Area;
- GA Facilities;
- Industrial Aviation;
- Airport Operations;
- Undeveloped Area;
- Reserved for Future Aviation Development;
- Location Study Corridor (Paseo del Volcan EIS, March 2000); and
- Roads.

The following paragraphs are devoted to defining each of these categories and describing the locations of these land uses on the airport property.

10.5.1.1 Airfield Area

This category includes land used for the runway/taxiway pavements, navigation aids, and their related critical clearance areas as defined by the FAA.

Figure 10.6 depicts the airfield area at Double Eagle II Airport. Also shown within the designated airside land use area are the runway protection zones (RPZ). The RPZs are trapezoid-shaped areas located off the ends of each runway in which the heights of structures or natural obstructions are limited as required by FAR Part 77.

10.5.1.2 General Aviation Facilities

All GA activities at Double Eagle II Airport are grouped under this land use designation. This includes GA commercial activities (FBOs) and GA non-commercial activities (aircraft storage hangars).

The commercial aviation function, by definition, consists of the FBOs and aircraft services. These activities include the sale of aviation services for a profit to the general public, including maintenance, storing and servicing of aircraft; sale of aircraft; sale of aircraft parts and accessories; sale of aircraft fuel, lubricants and propellants, and operation of non-scheduled and charter transportation.

The non-commercial aviation function, by definition, consists of those activities that involve the facilities for storage and service of aircraft for an individual, private organization, or corporation solely for its own benefit.

As shown on Figure 10.6, future GA activities will be located along the northwest side of existing Runway 4/22. When future Runway 4L/22R is completed, an additional midfield GA area will be available for development past the 20-year planning timeframe. An internal spine roadway will separate these areas.

10.5.1.3 Industrial Aviation

As shown on Figure 10.6, an area has been identified for future aviation-related industrial use. By definition, this area is reserved for those uses which involve the manufacturing, overhaul, and testing of aircraft products, parts, and/or systems. This area is located on the southwestern end of Runway 17/35 and is reserved for the development of Eclipse Aviation facilities.

10.5.1.4 Airport Operations

The operations and support areas consist of an Air Traffic Control Tower (ATCT), airport administration, airport maintenance, Airport Rescue and Fire Fighting (ARFF), airport utilities, and the electrical vault. As depicted in Figure 10.2, there are two areas reserved for Airport Operations. These areas are located northwest and southwest of the existing GA activities area.

10.5.1.5 Undeveloped Area

Areas classified as undeveloped areas are shown on Figure 10.6. These areas are not programmed for aviation use but can serve as a buffer for aviation-related activities.

10.5.1.6 Reserved for Future Aviation Development

There are two areas reserved for future aviation development. These areas are shown on Figure 10.6 and they are located in the future midfield area and south of the proposed Eclipse Aviation facilities. The undeveloped land is reserved for future aviation-related development required beyond the 20-year planning period.

10.5.1.7 Roadways (On-Airport)

The on-airport roadways include a planned internal loop road system. As depicted on Figure 10.6, this loop road system will establish free-flowing vehicular traffic movement from all proposed airport development activity centers, including the Eclipse Aviation facility located in the south quadrant. This is to be accomplished by extending in phases the internal spine road though the proposed new midfield development and connecting to the existing southern east/west access roads.

10.5.2 Surrounding Land Use

The ultimate airfield configuration and land uses surrounding Double Eagle II Airport are shown on Figure 10.7 and briefly described in the following paragraphs.

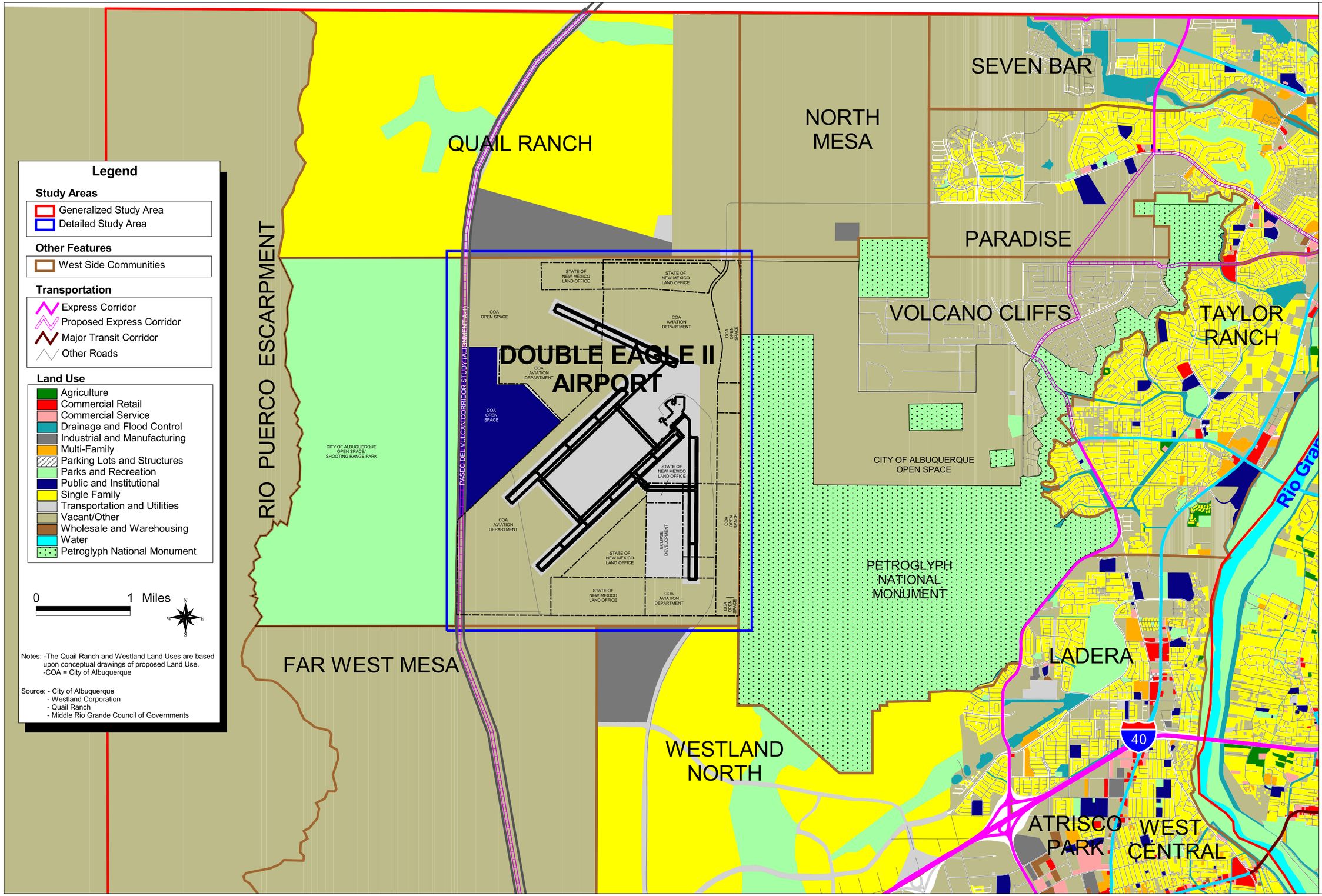


Figure 10.7

Surrounding Land Use

Double Eagle II Airport Master Plan

As shown, the Petroglyph National Monument is located adjacent to Double Eagle II Airport on the east side.

Southeast of the airport and north of I-40 is the proposed and ongoing Westland North development. The land use shown on the City of Albuquerque's land use plan consists of a track of Industrial and manufacturing land adjacent to the southern boundary of the airport. The rest of the Westland North development is shown as single-family residences and parks and recreation land use.

Southwest of the airport is the area identified as Far West Mesa. According to the West Side Strategic Plan, this area is not programmed to be developed within the next 20 years or more. However, when detailed land use planning for this area is being established, consideration should be given for land use compatibility with the airport and should consider the existing flight corridors in and out of Double Eagle II Airport over this land.

West of the airport is the City of Albuquerque's Shooting Range Park, soil amendment facility, correctional institution, the city's fire training facility, and open space. All of these land uses are compatible with the airport and there is no indication from the City of Albuquerque to relocate and redevelop this area.

North and northwest of the airport is Quail Ranch. This is a multi-year planned development community that consists of a track of industrial and manufacturing land adjacent to the north side of the Double Eagle II Airport property. The rest of Quail Ranch is shown as single-family residences and parks and recreation land use.

Northeast of the airport are the established communities of Seven Bar, Paradise, and Volcano Cliffs. The area identified as North Mesa is shown as vacant on the City of Albuquerque's land use plan at this time.

10.5.3 Preferred Surface Transportation System Alignment

The Paseo del Volcan Environmental Impact Statement, dated March 2000, identifies two study corridor alignments located adjacent to Double Eagle II Airport. These corridors were shown and discussed in Section 8.0 under future surface transportation alternatives. This expressway would provide north-south access to the rapidly growing west side of the Albuquerque and Rio Rancho metropolitan areas. As planned, this corridor would also be the western terminus of several east-west arterial roads proposed to serve the west side of the metropolitan area. The access provided by Paseo del Volcan would facilitate coordination of the transportation system and development within the corridor.

The preferred Pasco del Volcan Expressway alternative begins at I-40, approximately 2 miles west of the existing interchange for existing Paseo del Valcan Road to Double Eagle II Airport. This alignment extends through the Far West Mesa area to east of shooting Range Park at the western boundary of Double Eagle II Airport. It then extends north of Double Eagle II Airport, where Paseo del Volcan intersects with the proposed Paseo del Norte West extension. The

alignment turns northeasterly as it crosses into Sandoval County and terminates just south of Southern Boulevard/S.R. 44. The preferred expressway corridor is shown on Figure 10.8.

10.6 CONCEPTUAL BUILDING AREA PLANNING

10.6.1 Existing FBO Conceptual Plan

There are two existing full service FBOs on the airport: Bode Aviation (formerly Aerowest) and West Mesa Aviation. Both groups provided the city with FBO site improvement plans to be incorporated into the Master Plan Study. Each FBO's future plans are shown on Figure 10.9 and described in the following paragraphs.

- Bode Aviation – the Bode Aviation Group is currently modifying the site plan that Aerowest had prepared. Figure 10.9 still reflects the old Aerowest plan and will be revised when new information becomes available.
- West Mesa Aviation – The West Mesa plan shows the construction of two additional T-hangars along with the construction of a Bay Hangar.

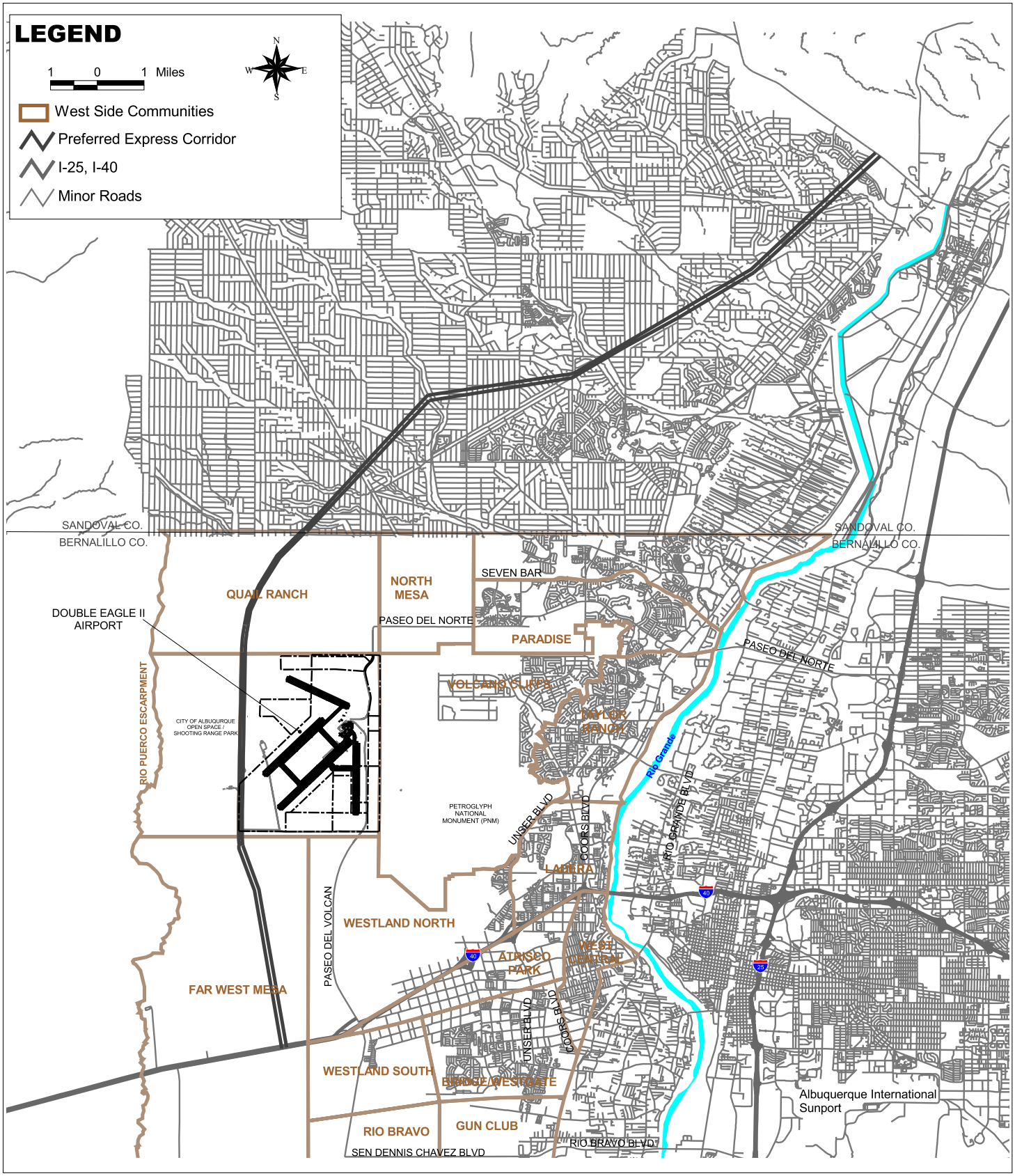
10.6.2 Midfield Conceptual Plan

For the purpose of this Master Plan Study, two midfield development concepts have been prepared. These two concepts depict the same amount of facilities with different arrangements. These concepts accommodate the landside facility requirements identified in Section 7.0, Landside Facility Requirements. In each concept, areas are reversed for T-hangars, corporate hangars, and FBO development. Within these areas, lease lines are established and infrastructure and access corridors are identified.

Midfield Conceptual Plan A, as shown on Figures 10.10 and 10.11, identifies two areas for future T-hangars, two areas for future FBO expansion, and a central corporate hangar complex. Midfield Conceptual Plan B is depicted on Figure 10.12. Midfield Conceptual Plan B identifies two separate areas for corporate development along with three FBO expansion areas and two T-hangar complexes. Both plans are preliminary and illustrate development flexibility of the midfield site.

10.6.3 City of Albuquerque Support Facilities Plan

As part of the functional land use organization of the airport, an area has been established in the plan for City of Albuquerque airport operational activities that includes a potential ATCT site, Double Eagle II Airport Administration offices, airport maintenance facilities, airport police facilities, and a future ARFF building. A concept plan depicting these facilities is shown on Figure 10.13.



DOUBLE EAGLE II AIRPORT MASTER PLAN

LONG RANGE ROADWAY SYSTEM

Figure 10.8

Double Eagle II Airport Master Plan

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EXISTING FBO CONCEPTUAL PLAN

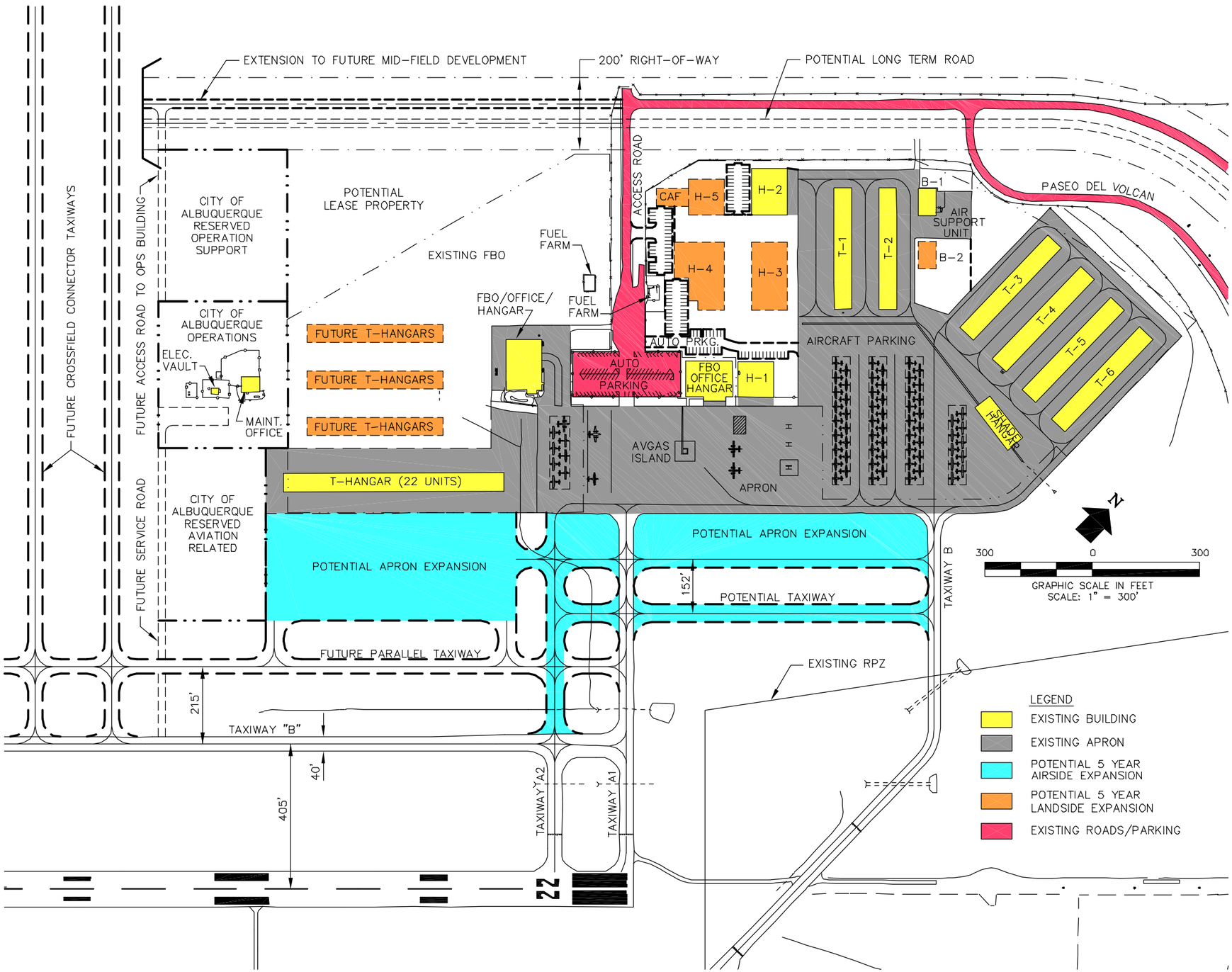

FIGURE: 10.9

J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.9.DWG 06/17/02 11:31

Double Eagle II Airport Master Plan

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BUILDING AREA LAND USE PLAN (LEASE LINE LAYOUT EXISTING/FUTURE)

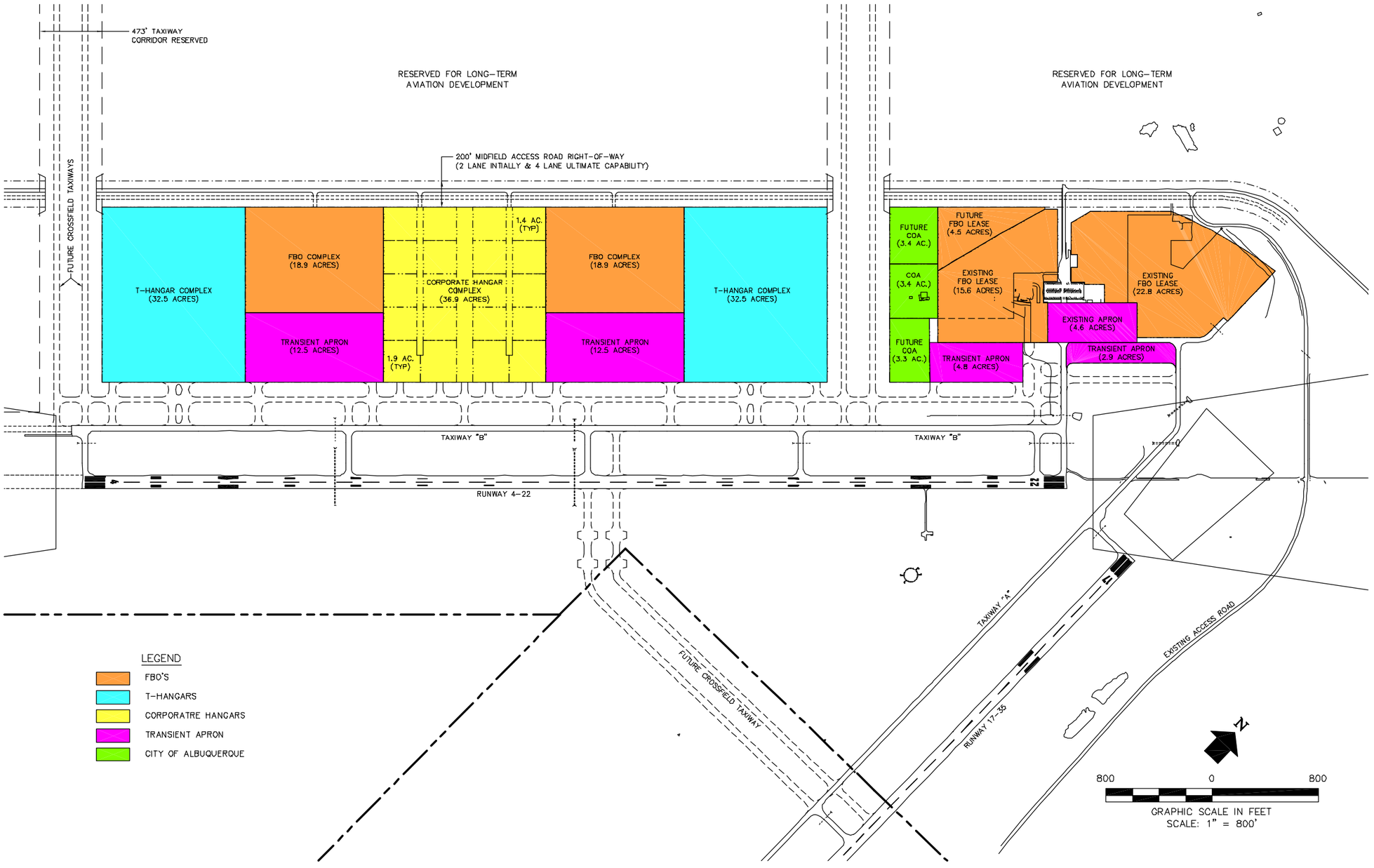

FIGURE: 10.10

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Double Eagle II Airport Master Plan

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MIDFIELD CONCEPTUAL PLAN A

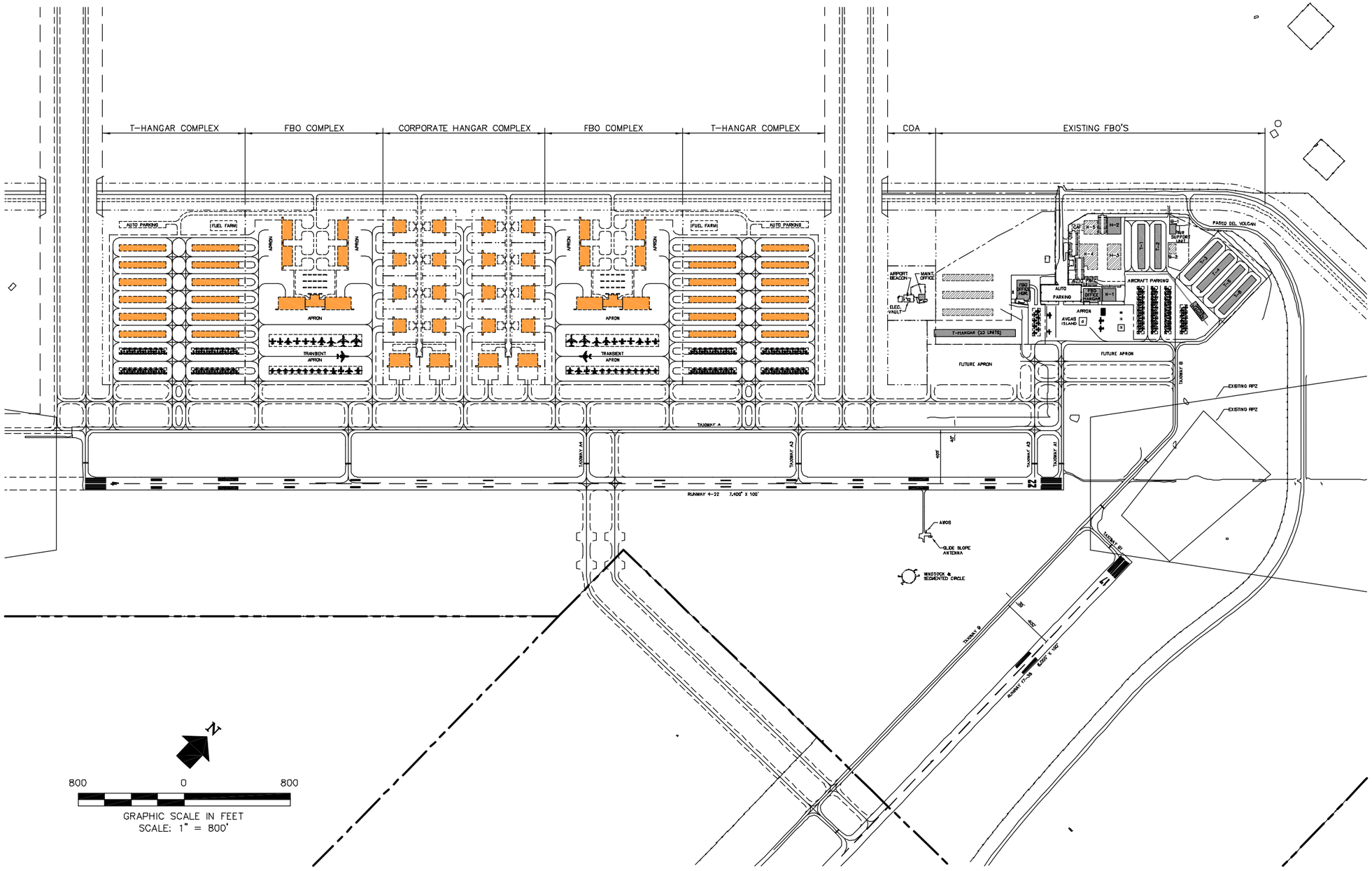

FIGURE: 10.11

J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.11.DWG 06/17/02 11:34

J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.12.DWG 06/17/02 08:37

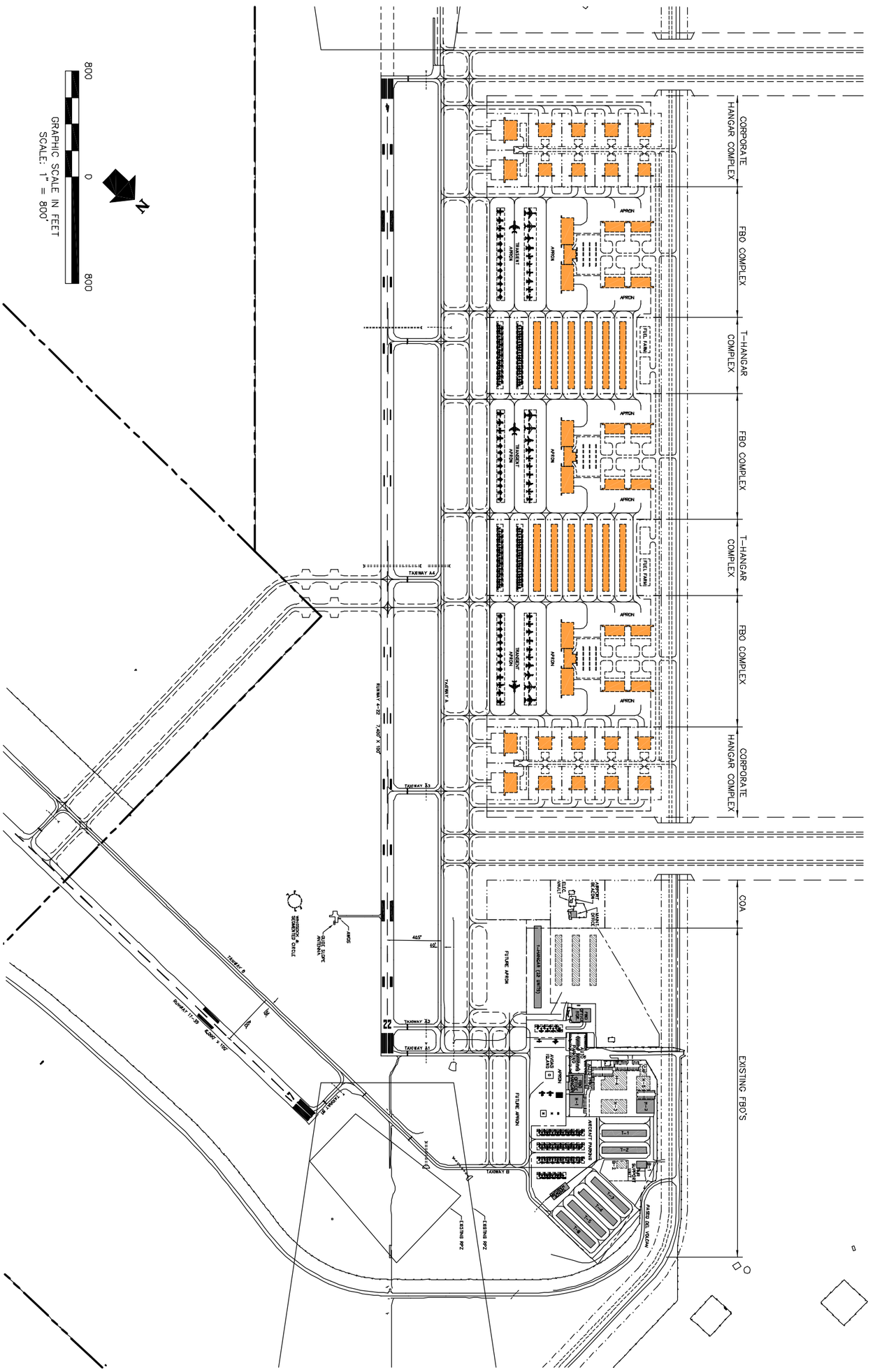

FIGURE: 10.12

MIDFIELD CONCEPTUAL PLAN B

Double Eagle II Airport Master Plan

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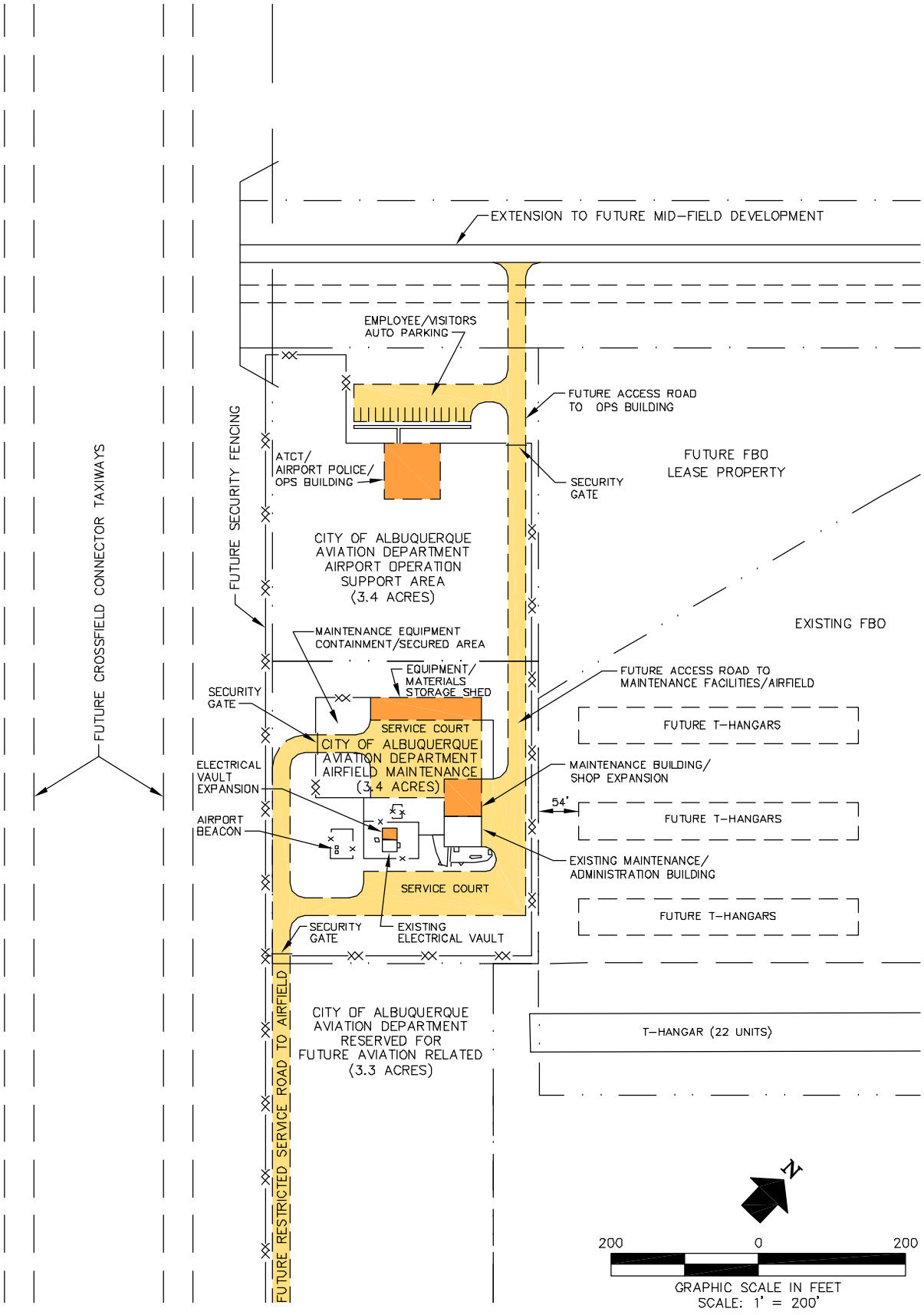

J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.13.DWG 06/17/02 11:38

Double Eagle II Airport Master Plan

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MAINTENANCE/SUPPORT FACILITIES CONCEPTUAL PLAN

FIGURE: 10.13

10.6.3.1 Airport Traffic Control Tower

Currently, there is no ATCT at Double Eagle II Airport. FAA guidance on the location of the ATCT is provided by FAA Publication Order 6480.4 *Airport Traffic Controlling Sitting Criteria.* This order establishes mandatory and non-mandatory requirements concerning the site and height selection of an ATCT. It is applicable to all projects for the establishment or relocation of FAA-funded ATCT facilities.

With establishment of a preferred ultimate airfield configuration, three preliminary ATCT sites were analyzed using the FAA ATCT sitting criteria. The three preliminary sites are shown on Figure 10.14. The actual ground elevation surveys of the potential ATCT sites are not available. Estimated ground elevations were made but could vary 5 to 10 feet so no ATCT structural heights are given, only MSL eye levels.

ATCT Site 1 is the most central to the ultimate airfield configuration. The controlling factor with this ATCT site location is the proposed Eclipse manufacturing plant building, which will require the tower to be high enough for the air traffic control (ATC) personnel to look over the top of the facility to the end of the existing and future Runway 36 end extensions. With an assumed maximum ground elevation on the Eclipse Aviation plant site of approximately 5,830 feet MSL and an estimated Eclipse facility with a maximum structural height of 40 feet (5,870 feet MSL), the Site 1 ATCT eye level would be around 6,033 feet MSL.

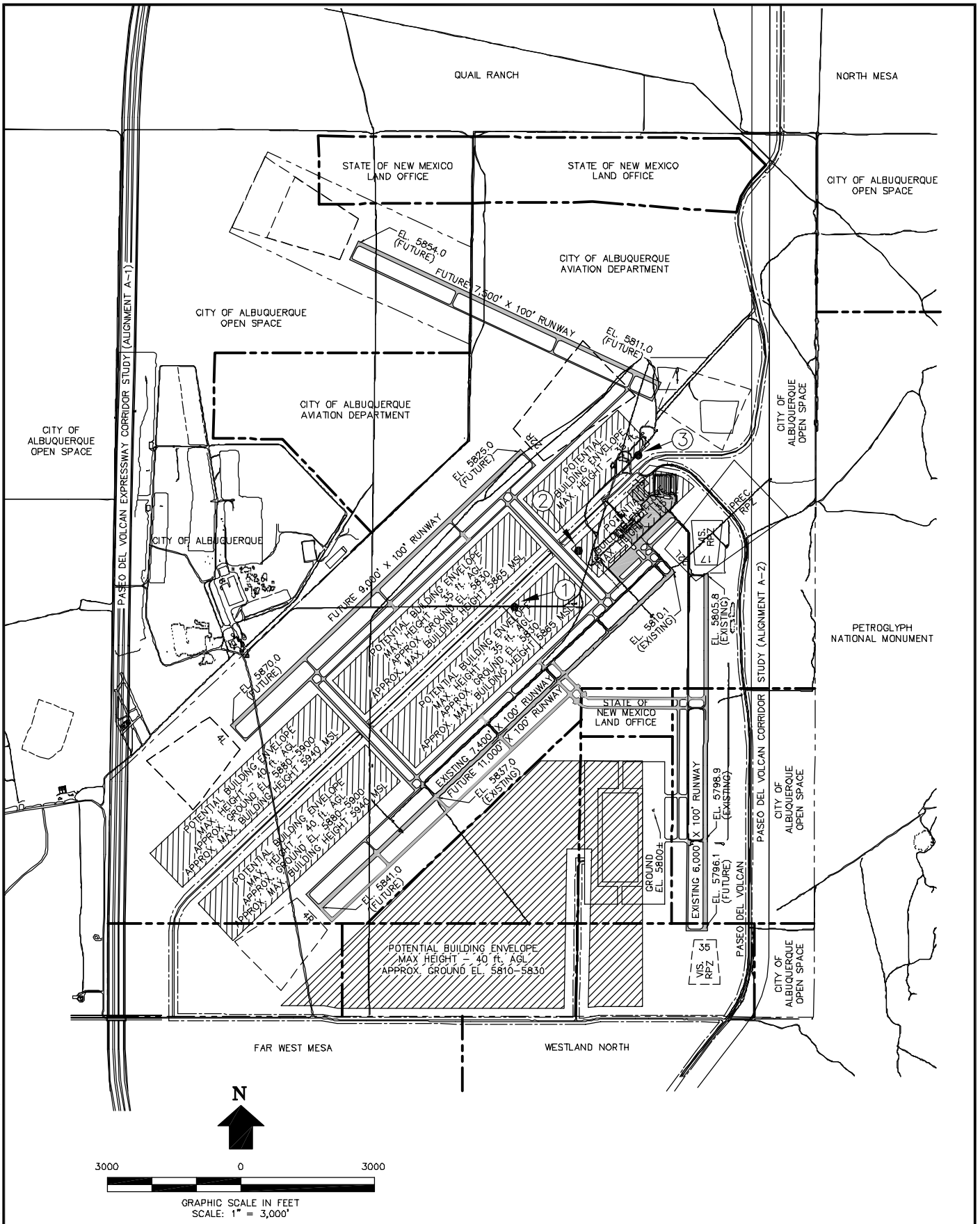
ATCT Site 2 is located northeast of Site 1. This location allows for the clear line of sight to the end of Runway 36 planned extension. The controlling ATCT height factor is the eye level viewing angle to the southwest end of the future long-range parallel Runway 4L/22R. The ATCT Site 2 ground elevation is assumed to be around 5,825 feet ± MSL and the estimated Site 2 tower eye level would be at 5,979 feet MSL.

ATCT Site 3 is located northeast of Site 2. This location has a clear line of sight to the extension of Runway 36. The controlling ATCT height factor is the eye level viewing angle to the future extension of Runway 4R. The ATCT Site 3 ground elevation is assumed to be around 5,820 feet MSL, and the estimated Site 3 tower eye level would be at 6,002 feet MSL.

A potential ATCT site plan is shown on Figure 10.13 in the vicinity of the City of Albuquerque Administration/airport maintenance facility. Another consulting firm is currently analyzing alternative ATCT sites, and a preferred ATCT site location should be identified for incorporation into this Master Plan by the summer of 2002.

10.6.3.2 Airport Administration

Currently, the Double Eagle II Airport Administration facility is shared with airport maintenance. Future plans call for a new dedicated airport administration facility collocated with the new ATCT. Others are still analyzing potential ATCT sites, and a preferred ATCT site location should be identified for incorporation into this Master Plan by the summer of 2002. Figure 10.13 depicts a possible location for these facilities.



J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.14.DWG 06/17/02 11:40

Double Eagle II Airport Master Plan

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PRELIMINARY ATCT SITE LOCATIONS

FIGURE: 10.14

10.6.3.3 Airport Maintenance

The development plan calls for airport maintenance facilities to remain in their present location. As shown on Figure 10.13, an area adjacent to the existing facility has been reserved for future maintenance/shop building expansion along with the construction of a ground maintenance equipment storage shelter. In addition, a corridor for a future access road to the maintenance site has been identified along with a corridor for secure access to the airfield.

10.6.3.4 Airport Police

An area for an airport police facility is planned for Double Eagle II Airport. It is anticipated that this facility will be collocated with the new ATCT. Others are still analyzing potential ATCT sites, and a preferred alternative should be identified for incorporation into this Master Plan by the summer of 2002. Figure 10.13 depicts a possible location for this facility.

10.6.3.5 Airport Rescue and Fire Fighting

Double Eagle II Airport does not currently have an ARFF facility. As operational levels increase, an ARFF facility should be planned for to enhance the operational safety of the airport.

10.7 ECLIPSE SITE PLAN (*To be provided by City of Albuquerque)*

- Initial Eclipse Development Program
- Ultimate Eclipse Development Capability

A generic aircraft manufacturing plant is shown on Figure 10.15.

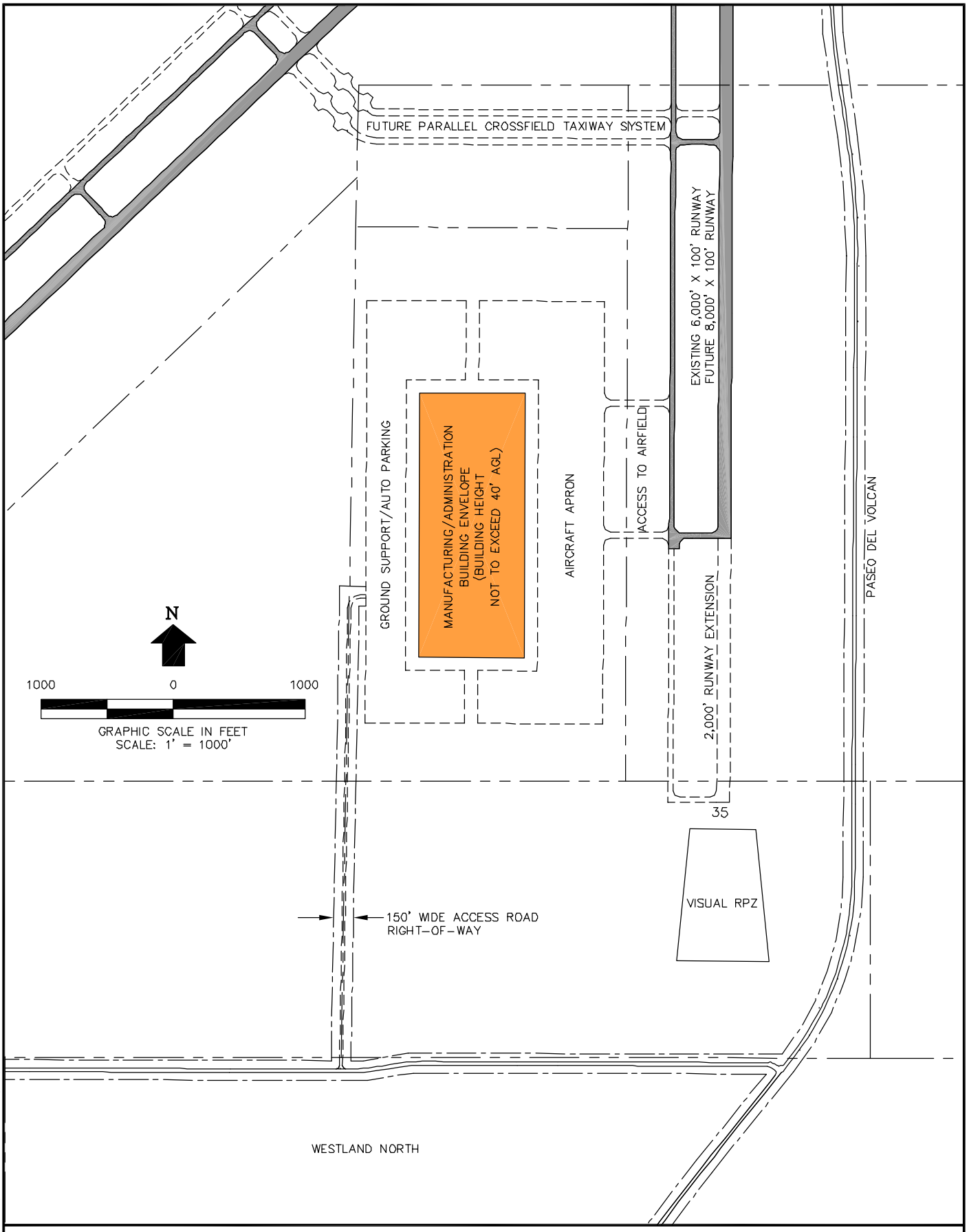
10.8 AIRPORT SECURITY FENCING PLAN

10.8.1 Airport Operations Area Fencing

A 6-foot perimeter chainlink fence is recommended to surround the airport operations area (AOA). This fencing will reduce the potential for runway incursions in addition to a potential security threat. Figure 10.16 depicts the security fencing plan, which shows a general location for the 6-foot AOA chainlink fence along with the existing 5-foot airport perimeter fence.

10.8.2 Perimeter Fencing

The existing farm fence surrounding the airport perimeter should eventually be replaced with a 6-foot chainlink fence. This will secure all the airport property not protected by the initial proposed airport operations area 6-foot fencing. This is part of a continuing effort by the City of Albuquerque to secure the entire airport by enclosing it with perimeter fencing. Although the FAA does not mandate fencing for the size and classification of Double Eagle II Airport, fencing is highly recommended for safety and security concerns.



J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.15.DWG 06/17/02 11:42

Double Eagle II Airport Master Plan

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GENERIC AIRCRAFT MANUFACTURING PLANT

FIGURE: 10.15

QUAIL RANCH

NORTH MESA

CITY OF ALBUQUERQUE OPEN SPACE

CITY OF ALBUQUERQUE OPEN SPACE

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

CITY OF ALBUQUERQUE OPEN SPACE

PASEO DEL VOLCAN EXPRESSWAY CORRIDOR STUDY (ALIGNMENT A-1)

CITY OF ALBUQUERQUE

PRFC. RPZ

VIS. RPZ 17

AVIATION DEVELOPMENT

PETROGLYPH NATIONAL MONUMENT

EXISTING 6,000' X 100' RUNWAY

EXISTING 7,400' X 100' RUNWAY
FUTURE 11,000' X 100' RUNWAY

ECLIPSE DEVELOPMENT

VIS. RPZ 35

PASEO DEL VOLCAN

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

CITY OF ALBUQUERQUE OPEN SPACE

STATE OF NEW MEXICO LAND OFFICE

CITY OF ALBUQUERQUE AVIATION DEPARTMENT

FAR WEST MESA

WESTLAND NORTH

LEGEND

6' CHAIN LINK FENCE

5' FARM FENCE

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2000 0 2000

GRAPHIC SCALE IN FEET
SCALE: 1" = 2,000'

J:\DOUBLE EAGLE II\EXHIBITS\FIG 10.16.DWG 06/17/02 11:44

Double Eagle II
Airport Master Plan

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SECURITY FENCING PLAN

FIGURE:
10.16